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ABSTRACT

Once every three years, school districts receiving Chapter 1 funds are required to conduct a study of the sustained effects of their Chapter 1 programs. To meet this requirement, the Columbus Public Schools employed a fall-spring-fall test design to determine the degree to which pupils who participated in the Compensatory Language Experiences and Reading (CLEAR) program remained at least at the same level from spring of the treatment year until fall of the next school year. Over 2,000 elementary and middle school students were in the evaluation sustained effects group. The results indicate some decline in most grade levels in reading during the summer months, with grades 6 and 7 having the greatest percentage of pupils who maintained their achievement level from the previous spring. In grades 2 through 5, over 36 percent of the students maintained their achievement level. The first grade had achieved the greatest growth at the end of the instructional period, but also showed the greatest decline over the summer. (BW)

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Education Consolidation and Improvement Act - Chapter 1

REPORT OF THE CHAPTER 1 SUSTAINED EFFECTS STUDY

Report Date: March, 1984

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REPORT OF THE CHAPTER 1 SUSTAINED EFFECTS STUDY

Report Date: March, 1984

ECIA Chapter 1 evaluation guidelines require school districts which are receiving Chapter 1 funds to conduct a study of the sustained effects of Chapter 1 programs. This study must be conducted once every three years. The district is not required to report the results of this study to federal or state agencies. The district is required to keep on file the results of the sustained effects study, and to use results in planning Chapter 1 programs.

To meet the sustained effects requirement, the Columbus Public Schools employed a fall-spring-fall test design. The purpose of the test design was to determine the degree to which the pupils who participated in compensatory programs remained at least at the same level from spring of the treatment year until fall of the next school year.

Pupils from the Compensatory Language Experiences and Reading (CLEAR) program were included in the study. The purpose of the CLEAR program was to improve the language and reading skills of selected underachieving pupils in grades kindergarten through eight.

The present report provides data regarding two questions. First, what effect did the 1982-83 school year have on the achievement levels of pupils in the CLEAR program? Second, what was the effect of the time period between May, 1983 and October, 1983 on the achievement levels of pupils in the CLEAR program?

Method

Pupils

The pupils included in the sustained effects study met the following five criteria. First, the pupils participated in the CLEAR program in one of the Columbus Public Schools during the 1982-83 school year. Non-public program pupils were not included in the study because of the anticipated difficulty of locating these pupils the following school year. Second, the pupils were in grades one through seven during the 1982-83 school year. Third, each pupil attended at least 80% of the program days between pretest and posttest. This meant that each pupil attended at least 112 of the 140 program days. Fourth, pupils were promoted to the next grade at the end of the 1982-83 school year. The sustained effects test was given as part of the pretest procedures for the 1983-84 school year. Thus pupils were given the level of the test specified by the Chapter 1 evaluation design. Pupils who were retained took a lower level of the test than promoted pupils. A study of the raw scores of retained pupils indicated that the test level was somewhat low for these pupils and that a ceiling effect had occurred. For this reason, the decision was made to drop the scores of retained pupils from the study. Fifth, complete pretest, posttest, and sustained effects test data were collected on all of the pupils.

Table 1

Number of Pupils Meeting Various Criteria for Inclusion in the Sustained Effects Study Reported by Program and Grade Level

1982-83 Treatment Grade	Pupils With Pretest Score, Posttest Score, & Met Attendance Criteria	Pupils With Sustained Effects Scores	Pupils Who Were Promoted and Included in the Study
	CLEAR	CLEAR	CLEAR
1	162	73	73
2	857	670	609
3	565	326	292
4	420	342	314
5	322	266	259
6	596	522	474
7	312	268	245
Total	3,234	2,467	2,266

Table 1 provides a description of the affect of applying these five criteria. The first set of figures shows the number of pupils at each grade level in the CLEAR program who were eligible for inclusion in the sustained effects study. These pupils met the first three criteria. The second set of figures shows the number of pupils on whom sustained effects scores were obtained. The third set of figures shows the number of pupils who met all criteria and were included in the analyses. A comparison of the first two sets of figures shows that sustained effects scores were collected on 76.3% of all CLEAR pupils eligible for inclusion in the study. A comparison of the second and third sets of figures showed that of the pupils having complete pretest, posttest and sustained effects scores, 91.9% of the CLEAR pupils were included in the sustained effects study. A comparison of the first and third sets of figures shows that of all the pupils eligible for the sustained effects study 70.1% of the CLEAR pupils met the five criteria and were included in the study.

Test Instruments

The test design used the Reading Survey test of the Metropolitan Achievement Tests (MAT; Prescott, Balow, Hogan & Farr, 1978) for CLEAR pupils. The norms were established in October, 1977 and April, 1978. Table 2 gives the MAT test form and level used for each grade.

Procedure

In the Fall of 1983, the compensatory education Program Involvement File (PIF) for 1982-83 was used to identify pupils eligible for inclusion in the sustained effects study. (To be eligible the pupil had to meet the first three criteria given in the "Pupils" section of this report.) A printout listing necessary pupil and testing information was produced for each school.

A compensatory education teacher assigned to a school served as the sustained effects liaison person for the building. The printout and the necessary test materials and instructions were sent to the liaison person. The liaison person was responsible for collecting and reporting test data for pupils listed on the printout. Also, the liaison person collected and reported data for any eligible pupil whose name may not have appeared on the printout for the school.

Table 2

Testing Schedule for the Reading
Sustained Effects Study

Grade		Metropolitan Achievement Test		
1982-83 Treatment Grade	1983 Sustained Test Grade	Pre-Test	Post-Test	Sustained Test
1	2	Preprimer	Primer	Primer
2	3	Primer	Primary 1	Primary 1
3	4	Primary 1	Primary 2	Primary 2
4	5	Primary 2	Elementary	Elementary
5	6	Elementary	Intermediate	Elementary
6	7	Intermediate	Intermediate	Intermediate
7	8	Intermediate	Advanced 1	Advanced 1

The sustained effects test data reported by the liaison persons were entered into the PIF system. The data were edited, and derived scores (grade equivalent, percentile, standard score, normal curve equivalent) were determined for the raw score of each pupil. This resulted in a data file for CLEAR pupils in the sustained effects study. From these files, normal curve equivalent (NCE) means and frequency distributions were determined for the pretest, posttest and sustained effects tests. Distribution of percentile ranks were established.

Results

The following is a report by grade level of the reading scores of the 2,260 pupils in the CLEAR program. Figures 1-6 and Tables 3-5 pertain to the reading scores.

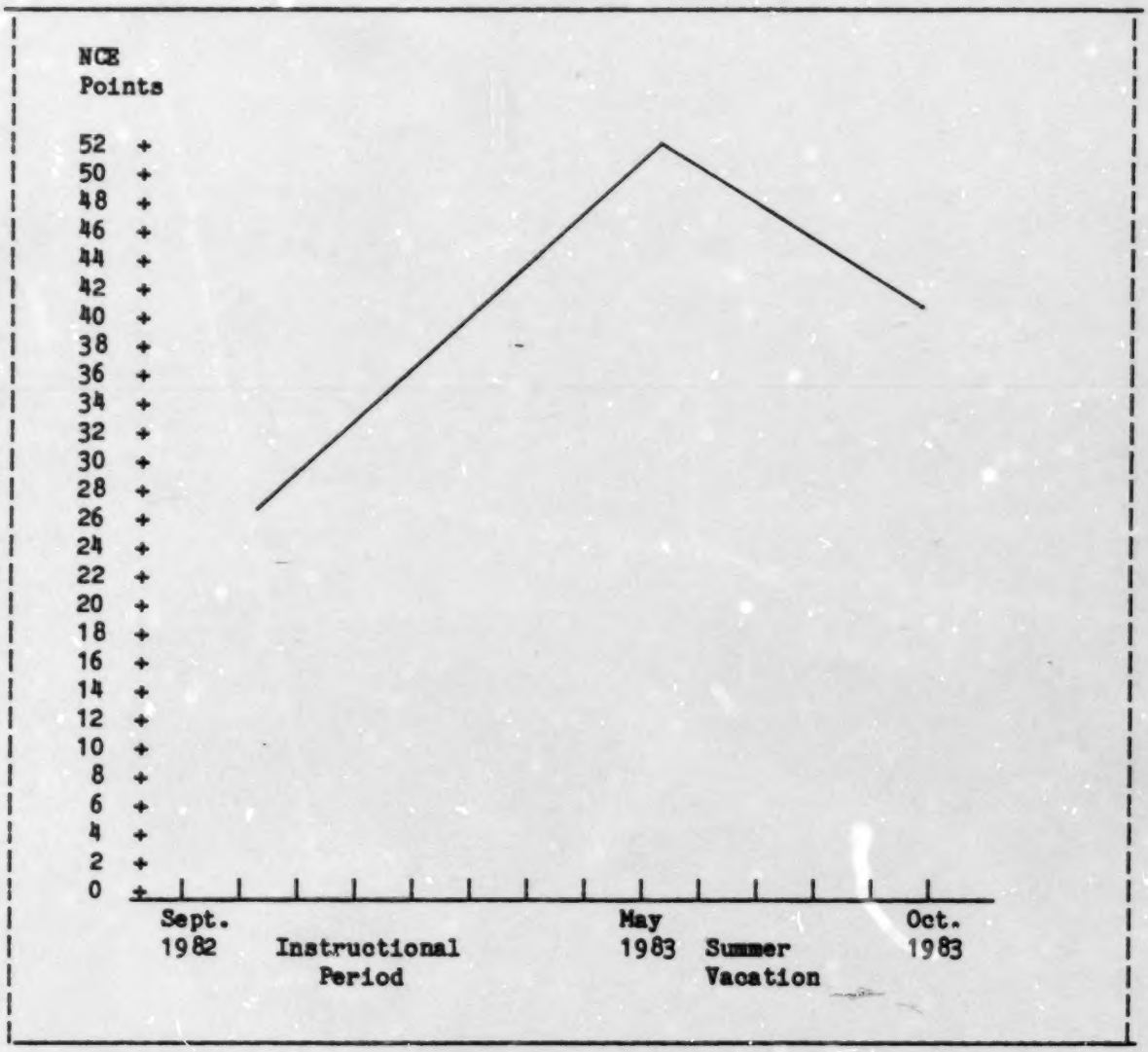

Figure 1. A comparison of the average pretest, posttest, and sustained effects NCE scores for first graders in the Chapter 1 CLEAR program.

The average pretest-posttest NCE gain for first graders in the Chapter 1 CLEAR program was 25.2 points. When the sustained effects testing was done in October 1983, the average NCE score dropped 11.0 points. The average NCE gain from pretest to sustained effects test was 14.2 points. Of the 73 first graders in the study, 19.2% (14) pupils maintained their NCE level on the sustained effects test.

On the pretest 15.1% (11) of the 73 first graders in the Chapter 1 CLEAR program scored above the 36th percentile. On the posttest 67.1% (49) scored above the 36th percentile. On the sustained effects test the percentage had dropped to 50.7% (37) who scored above the 36th percentile.

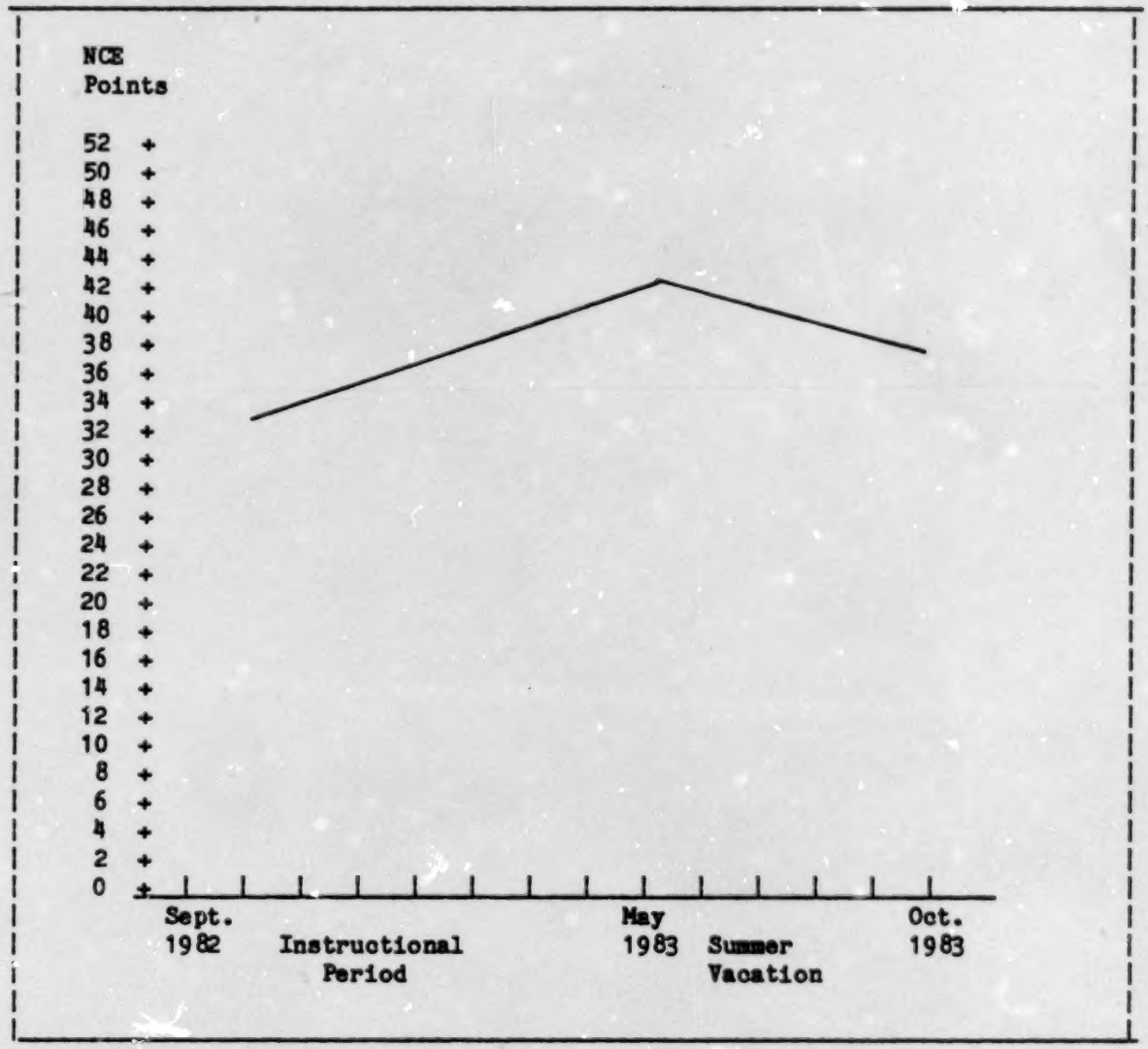

Figure 2. A comparison of the average pretest, posttest, and sustained effects NCE scores for second graders in the Chapter 1 CLEAR program.

The average pretest-posttest NCE gain for second graders in the Chapter 1 CLEAR program was 9.5. When the sustained effects testing was done in October, 1983, the average NCE score dropped 4.7 points. The average NCE gain from pretest to sustained effects was 4.8. Of the 609 second graders in the study, 36.1% (220) pupils maintained their NCE level on the sustained effects test.

On the pretest 20.5% (125) of the 609 second graders in the Chapter 1 CLEAR program scored above the 36th percentile. On the posttest 49.6% (302) pupils scored above the 36th percentile. On the sustained effects test the percentage had dropped to 36.9% (225) who scored above the 36th percentile.

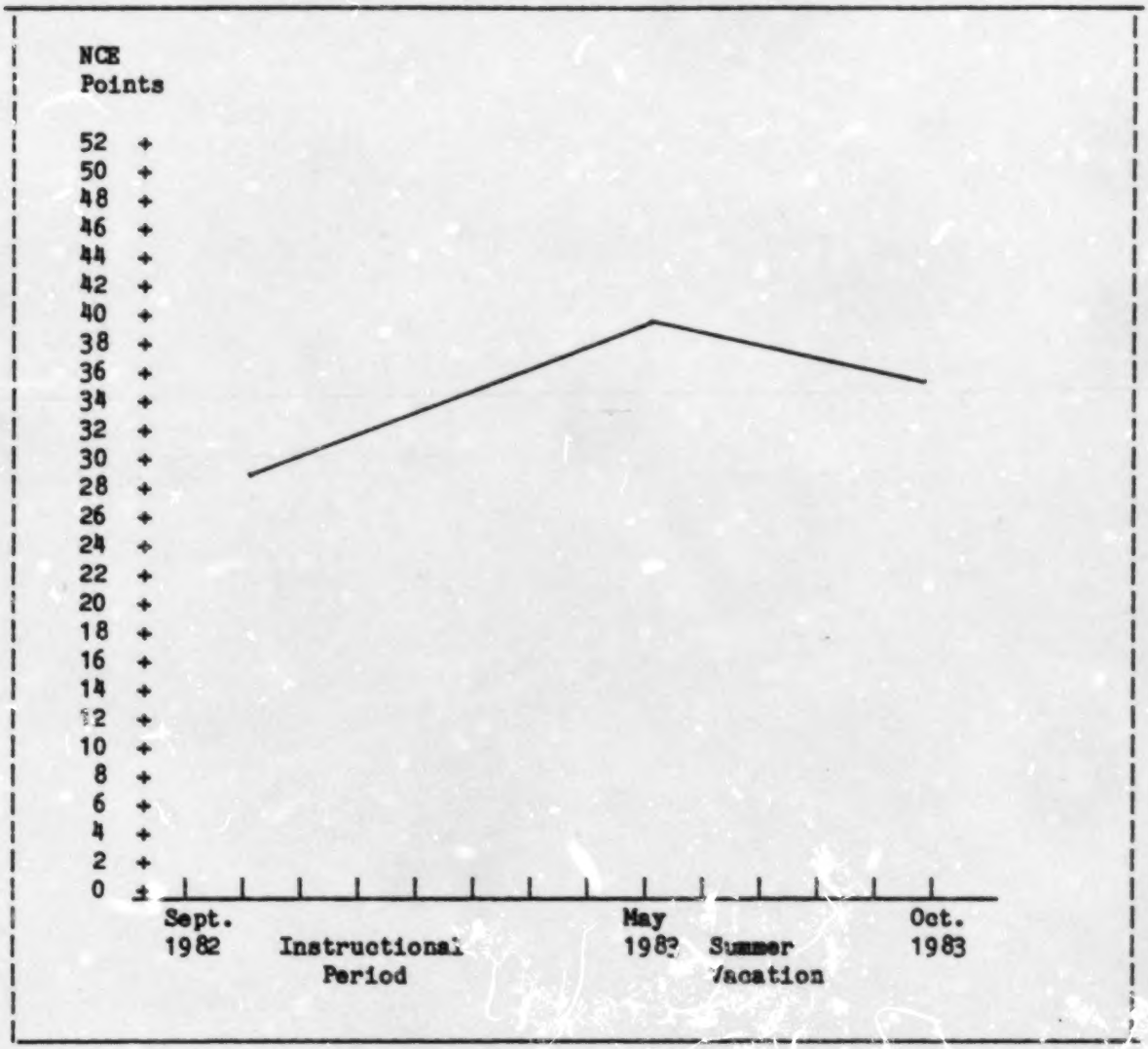

Figure 3. A comparison of the average pretest, posttest, and sustained effects NCE scores for third graders in the Chapter 1 CLEAR program.

The average pretest-posttest NCE gain for third graders in the Chapter 1 CLEAR program was 10.2. When the sustained effects testing was done in October 1983, the average NCE score dropped 4.2 points. The average NCE gain from pretest to sustained effects test was 6.0. Of the 292 third graders in the study, 36.3% (106) pupils maintained their NCE level on the sustained effects test.

On the pretest, 14.4% (42) third graders in the Chapter 1 CLEAR program scored above the 36th percentile. On the posttest 38.4% (112) scored above the 36th percentile. On the sustained effects test the percentage had dropped to 24.3% (71) who scored above the 36th percentile.

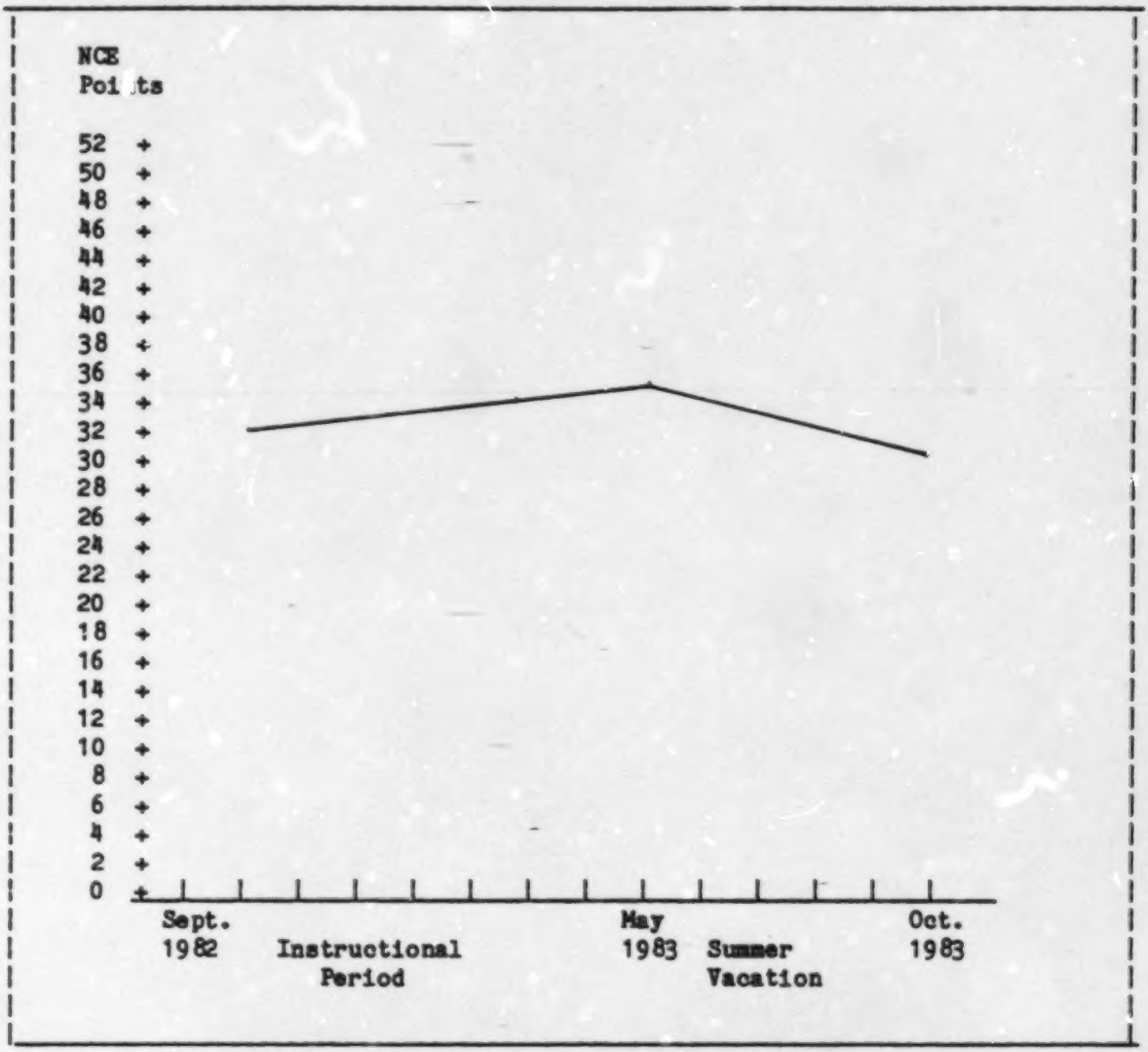

Figure 4. A comparison of the average pretest, posttest, and sustained effects NCE scores for fourth graders in the Chapter 1 CLEAR program.

The average pretest-posttest NCE gain for fourth graders in the Chapter 1 CLEAR program was 2.8. When the sustained effects testing was done in October 1983, the average NCE score dropped 4.4 points. The average NCE score on the sustained effects test showed a decrease of 1.6 NCE points from the pretest. Of the 314 fourth graders in the study, 37.9% (119) pupils maintained their NCE level on the sustained effects test.

On the pretest 16.6% (52) of the 314 fourth graders in the Chapter 1 CLEAR program scored above the 36th percentile. On the posttest 23.6% (74) scored above the 36th percentile. On the sustained effects test the percentage had dropped to 16.9% (53) who scored above the 36th percentile.

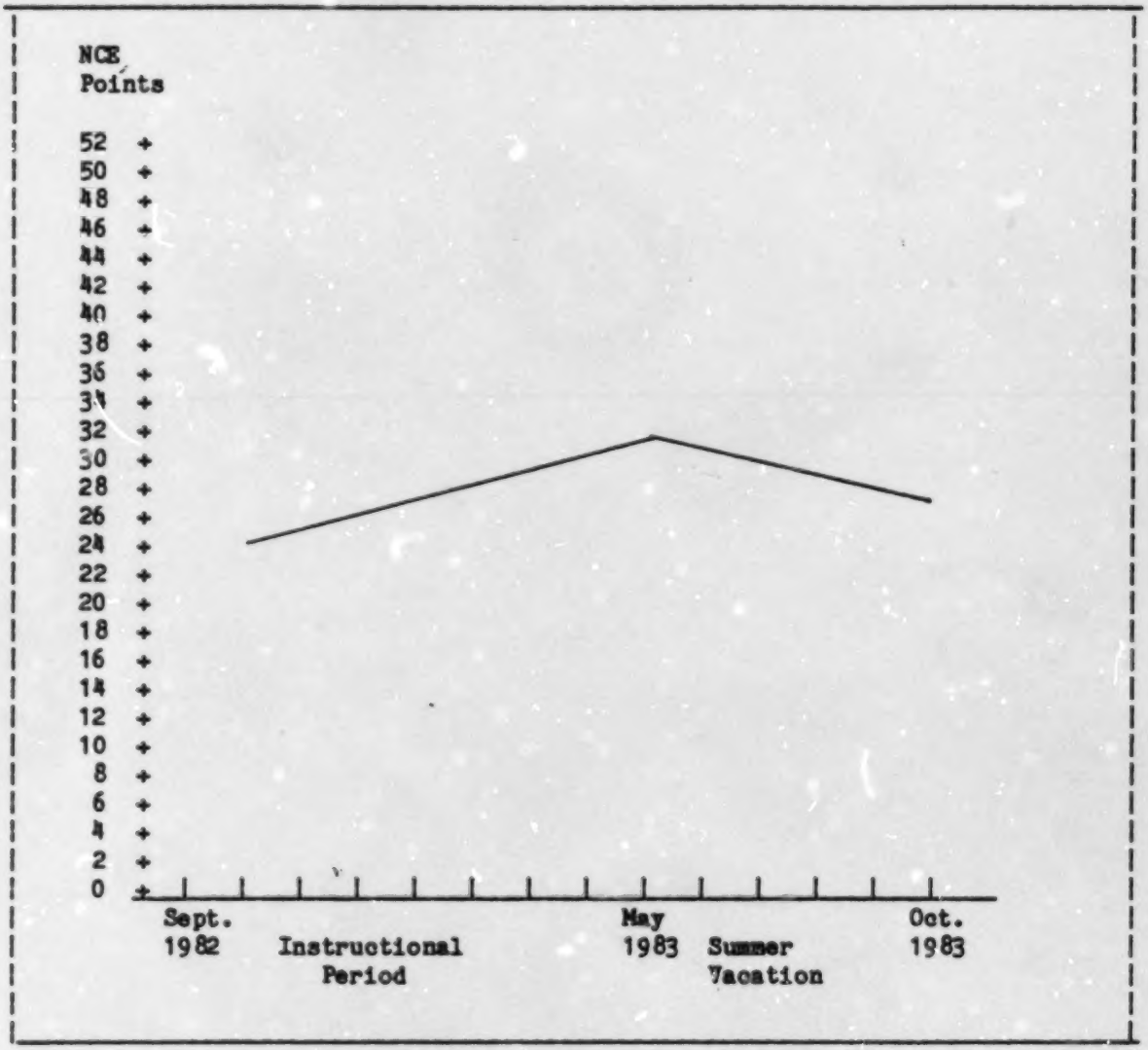

Figure 5. A comparison of the average pretest, posttest, and sustained effects NCE scores for fifth graders in the Chapter 1 CLEAR program.

The average pretest-posttest NCE gain for fifth graders in the Chapter 1 CLEAR program was 7.8. When the sustained effects testing was done in October 1983, the average NCE score dropped 4.8 points. The average NCE gain from pretest to sustained effects test was 3.0. Of the 259 fifth graders in the study, 36.3% (94) pupils maintained their NCE level on the sustained effects test.

On the pretest 3.1% (8) of the 259 fifth graders in the Chapter 1 CLEAR program scored above the 36th percentile. On the posttest 11.6% (30) scored above the 36th percentile. On the sustained effects test the percentage had dropped to 9.3% (24) who scored above the 36th percentile.

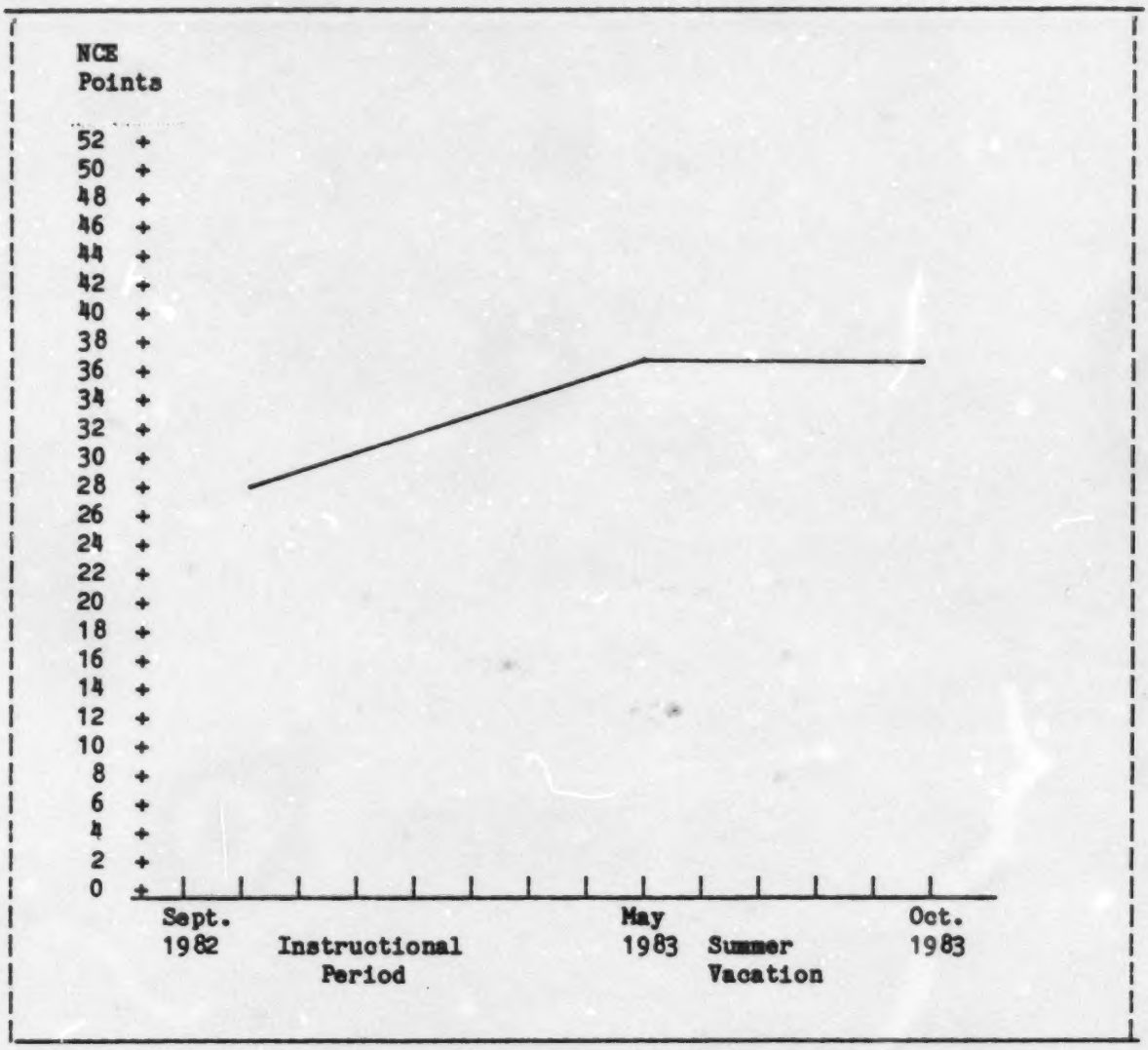

Figure 6. A comparison of the average pretest, posttest, and sustained effects NCE scores for sixth graders in the Chapter 1 CLEAR program.

The average pretest-posttest NCE gain for sixth graders in the Chapter 1 CLEAR program was 8.9. When the sustained effects testing was done in October 1983, the average NCE had remained the same. The average NCE gain from pretest to sustained effects test was 8.9. Of the 474 sixth graders in the study, 51.0% (242) pupils maintained their NCE level on the sustained effects test.

On the pretest 9.5% (45) of the 474 sixth graders in the Chapter 1 CLEAR program scored above the 36th percentile. On the posttest 19.8% (94) scored above the 36th percentile. On the sustained effects test the percent had increased to 24.1% (114) of the students.

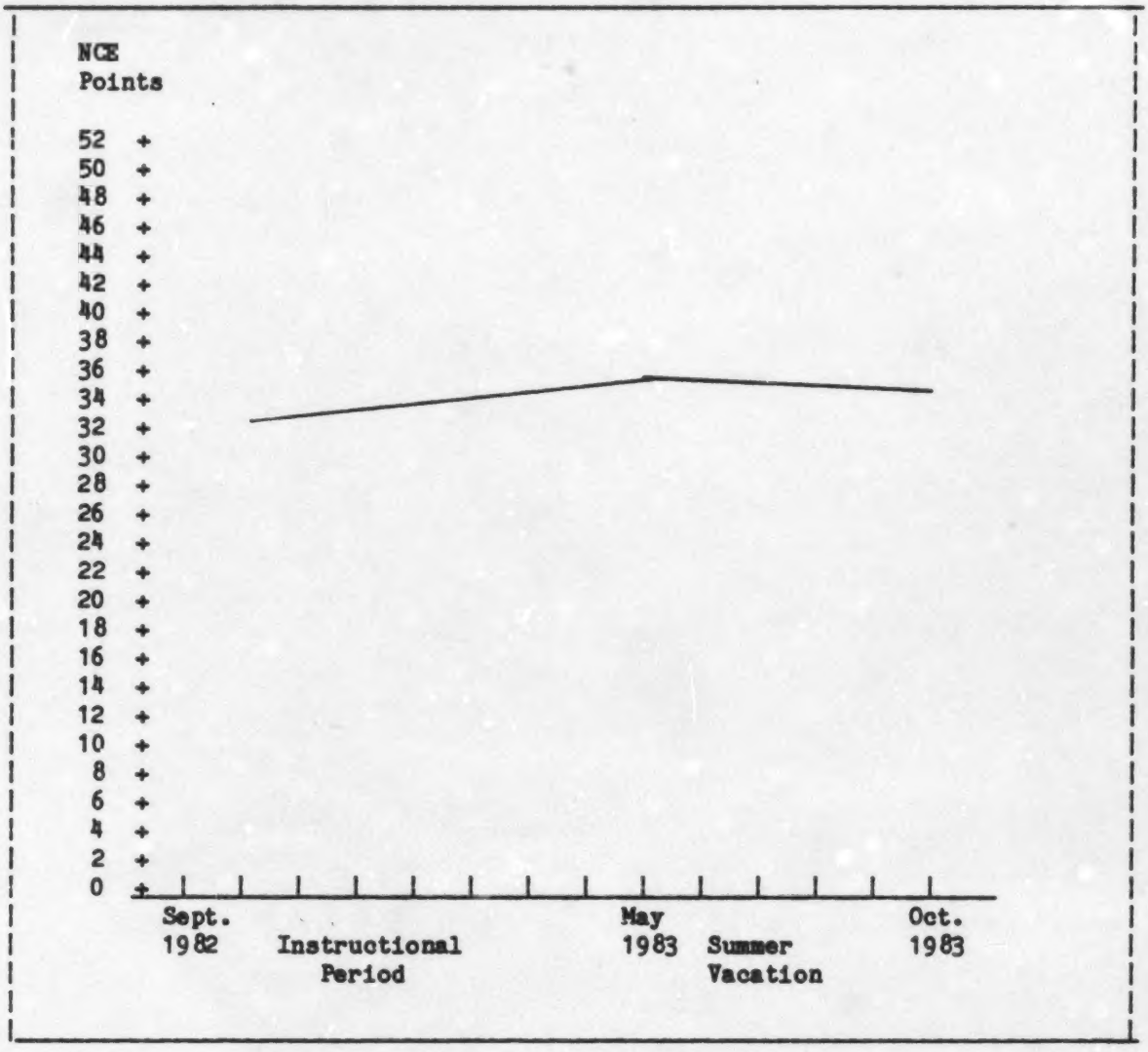

Figure 7. A comparison of the average pretest, posttest, and sustained effects NCE scores for seventh graders in the Chapter 1 CLEAR program.

The average pretest-posttest NCE gain for the seventh graders in the Chapter 1 CLEAR program was 3.2 points. When the sustained effects was done in October, 1983, the average NCE score dropped .7 points. The average NCE gain from pretest to sustained effects test was 2.5 points of the 245 seventh graders in the study, 46.0% (113) students maintained their NCE level in the sustained effects test.

On the pretest 19.2 (47) of the 245 seventh graders in the Chapter 1 CLEAR program scored above the 36th percentile. On the posttest, 29.8 (73) scored above the 36th percentile. On the sustained effects test the percent had dropped to 24.1 (59) who had scored above the 36th percentile.

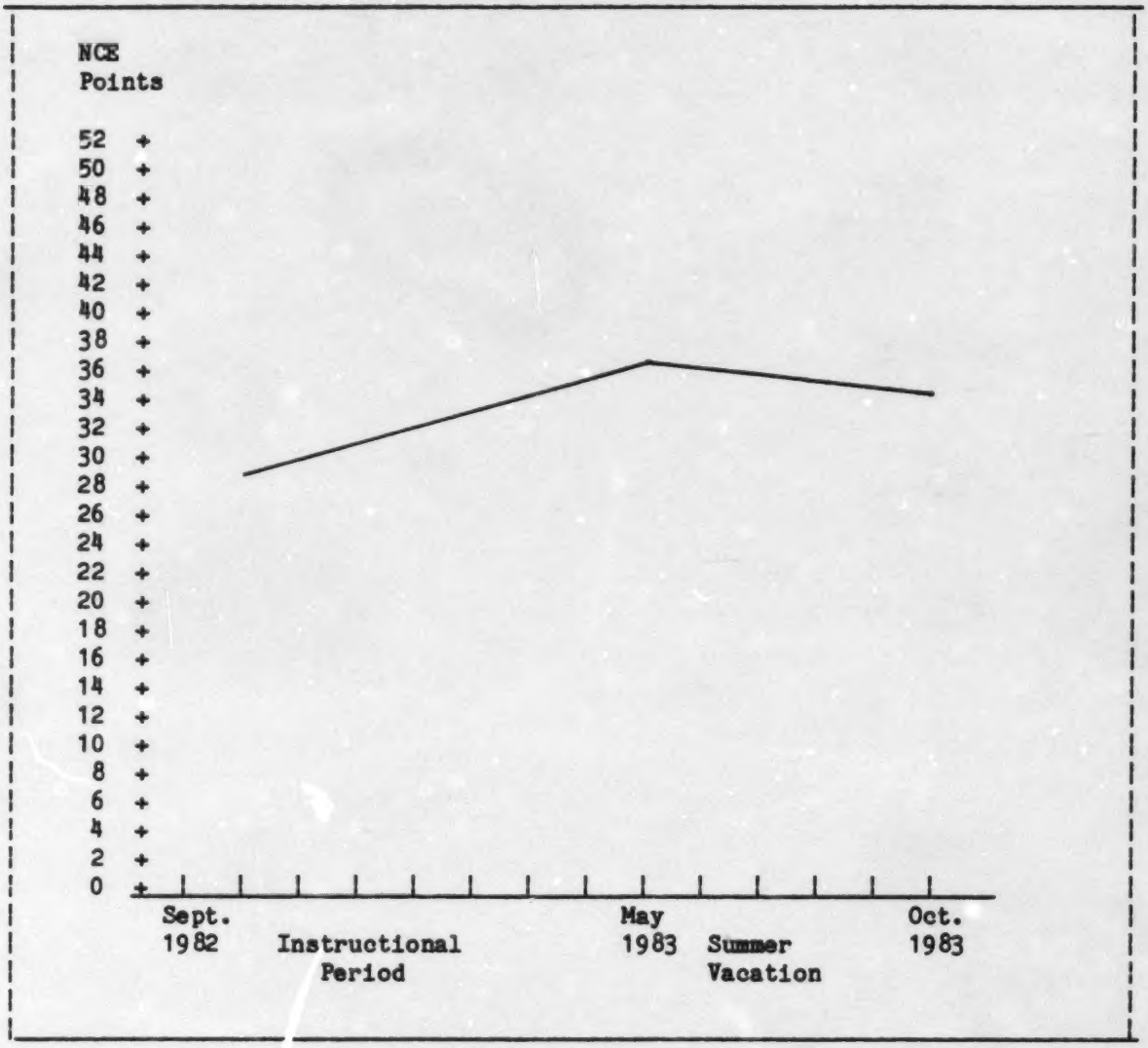

Figure 8. A comparison of the average pretest, posttest, and sustained effects NCE scores for all pupils in the Chapter 1 CLEAR program.

The average pretest-posttest NCE gain for all students in the Chapter 1 CLEAR program was 8.1. When the sustained effects testing was done in October, 1983, the average NCE score dropped 2.5 points. The average NCE gain from pretest to sustained effects test was 5.6. Of all pupils in the study, 41.4% (938) pupils maintained their NCE level on the sustained effects test.

On the pretest 14.6 (331) of the 2,266 Chapter 1 CLEAR program pupils scored above the 36th percentile. On the posttest 32.4 (734) scored above the 36th percentile. On the sustained effects test the percentage had dropped to 26.4 (598).

Table 3

NCE Means and Standard Deviation
in Reading for Each of the
Three Testing Periods

		Pretest		Posttest		Sustained Effects	
Grades	N	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.
1	73	26.6	15.4	51.8	12.1	40.8	13.3
2	609	33.0	12.7	42.5	15.2	37.8	16.8
3	292	29.2	15.1	39.4	13.2	35.2	13.9
4	314	32.1	12.9	34.9	12.9	30.5	15.0
5	259	24.2	11.5	32.0	11.6	27.2	12.6
6	474	28.0	12.1	36.9	11.0	36.9	11.6
7	245	32.4	12.4	35.6	12.6	34.9	12.4
Total	2266	29.0	13.3	37.1	13.8	34.6	14.7

Table 4

Percent of Pupils Who Scored
Above the 36th Percentile
in Reading

Grade	Pretest	Posttest	Sustained Test
1	15.1	67.1	50.7
2	20.5	49.6	36.9
3	14.4	38.4	24.3
4	16.6	23.6	16.9
5	3.1	11.6	9.3
6	9.5	19.8	27.4
7	19.2	29.8	24.1
Total	14.6	32.4	26.4

Table 5

Summary of NCE Average Changes
and the Percent of Pupils Who
Maintained Their Achievement Level

Grade	Number Tested	NCE Change			Maintained Posttest NCE Level
		Pretest-Posttest	Posttest-Sustained Effects	Pretest-Sustained Effects	
1	73	25.2	-11.0	14.2	19.2%
2	609	9.5	- 4.7	4.8	36.1%
3	292	10.2	- 4.2	6.0	36.3%
4	314	2.8	- 4.4	- 1.6	37.9%
5	259	7.8	- 4.8	3.0	36.3%
6	474	8.9	0	8.9	51.0%
7	245	3.2	- .7	2.5	46.0%
All	2,266	8.1	- 2.5	5.6	41.4%

Discussion

The middle school had the greater percentage of pupils who maintained their achievement level from the previous spring. The sixth and seventh grades had 51.0% and 46.0% respectfully whose sustained effects score was equal to or better than the posttest score. With the exception of the first grade, the percent of elementary pupils who maintained their achievement level was relatively the same. The range of scores for grades 2 through 5 was 36.1% to 37.9%. The first grade had 19.2% who had maintained their posttest scores. However, the first grade had demonstrated the largest gain from pretest to posttest, but had also shown the largest drop in NCE points from posttest to sustained effects test. Overall the sixth grade had the least amount of change from the posttest in the spring to the sustained effects test in the fall (see Table 5).

Comparing the overall NCE data with the 1981-82 study, a smaller decline from spring to fall was noted in the 1983-84 data. Specifically, the 1981-82 study indicated a greater "pre-post" gain and then a steeper "post-sustained" decline than figure 8 of the 1983-84 study. An inspection of the 1983-84 data for each grade level revealed that grades 6 and 7 changed little from posttesting to sustained effects testing. These two grades contributed significantly to the slower overall rate of decline.

Summary

In accordance with the Chapter 1 Federal guidelines the Columbus Public Schools completed the sustained effects study. The results of this study will be used in planning Chapter 1 programs.

The sustained effects design included a fall-spring-fall testing schedule. In the Chapter 1 CLEAR program 2,266 pupils were in the evaluation sustained effects group. These pupils took each of three scheduled tests and met the 80 percent attendance criterion of instructional days.

The results of the sustained effects study indicate some decline in all grade levels in reading during the summer months, with the exception of the sixth grade. Grades 2 through 5 had approximately the same decline in NCE points. The first grade had achieved the greatest growth at the end of the instructional period but also showed the greatest decline. Grades 6 and 7 showed little or no change from the posttest.

References

Prescott, G. A., Balow, I.H. Hogan, T.P. & Farr, R. C. Metropolitan Achievement Tests. New York, New York; The Psychological Corporation, 1978.